

USPN 10/605,830
Art Unit 3749
Amdt dated 01/025/2005
Reply to Office action of 10/25/2004

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.(Currently amended) A method of recovering heat energy during blowdown of a steam boiler, comprising:

providing a supply of feedwater to replenish water in said steam boiler during blowdown;

removing blowdown water from said steam boiler;

producing flash steam from said blowdown water;

transferring thermal energy contained in said flash steam to a mass of water for recovery of said thermal energy contained in said flash steam; and

transferring thermal energy remaining in said blowdown water ~~remaining after~~ production of said flash steam to said feedwater.

2. (Currently amended) The method of claim 1, wherein said mass of water is said feedwater, said thermal energy contained in said flash steam thereby being transferred directly to said feedwater.

3.(Original) The method of claim 1, wherein said mass of water is a separate body of water in an open vented tank.

4 (Currently amended) The method of claim 2~~1~~, wherein said blowdown water is transferred from said boiler to a flash chamber to generate said flash steam, and said flash steam is fed from said flash chamber into said mass of water feedwater-so as to condense therein.

USPN 10/605,830
Art Unit 3749
Amdt dated 01/025/2005
Reply to Office action of 10/25/2004

5. (Currently amended) The method of claim 4, wherein said blowdown water flows from said flash chamber into a blowdown recovery vessel, and fresh make-up water flows through a heat exchanger immersed in said blowdown recovery vessel to recover thermal energy therefrom and said make-up water thereafter flows from said heat exchanger into a feedwater tank to provide a supply of said feedwater.

6. (Currently amended) The method of claim 5, wherein said ~~flash steam is fed directly from said flash~~feedwater flows directly from ~~chamber into said feedwater in said~~
feedwater tank to said steam boiler.

7. (Currently amended) The method of claim 5, wherein said feedwater from said feedwater tank is passed through a second heat exchanger in said blowdown recovery vessel prior to flowing into said boiler so as to absorb additional heat from said blowdown water after ~~absorbing heat from~~from the release of said flash steam, prior to flowing into said steam boiler.

8. (Original) The method of claim 5, wherein any overflow water in said blowdown recovery vessel is extracted from near the bottom of said blowdown recovery vessel.

9. (Currently amended) A blowdown apparatus for use with a steam boiler, comprising:

a flash chamber for producing flash steam from blowdown water from a steam boiler;

a conduit for directing said flash steam into a tank containing a mass of water so as to transfer heat energy contained in said flash steam to said mass of water and thereby permit recovery of said heat energy contained in said flash steam;

a blowdown recovery vessel for containing blowdown water ~~from the~~ after the release of said flash steam boiler;

a feedwater tank for containing a supply of feedwater to replenish water in the

USSN 10/603,830
Art Unit 3749
Amdt dated 01/025/2005
Reply to Office action of 10/25/2004

steam boiler; and

a heat exchanger for transferring heat energy from said blowdown water to make-up water flowing into said feedwater tank[[:]].

~~a flash tank for producing flash steam from said blowdown water; and~~

~~a conduit for directing said flash steam into a tank containing a mass of water so as to transfer heat energy contained in said flash steam to said mass of water.~~

10. (Currently amended) The blowdown apparatus of claim 9, wherein said tank containing a mass of water is said feedwater tank so that said heat energy contained in said flash steam is transferred to said feedwater.

11. (Original) The blowdown apparatus of claim 9, wherein said tank containing a mass of water is an open vented tank.

12. (Original) The blowdown apparatus as claimed in claim 9, wherein said conduit feeds said flash steam directly into feedwater in said feedwater tank so that said flash steam condenses therein.

13. (Canceled)

14. (Currently amended) The blowdown apparatus as claimed in claim 12, wherein said flash ~~tank~~ chamber is mounted on top of said blowdown recovery vessel so that blowdown water remaining after losing said flash steam drops down from said ~~feedwater tank~~ flash chamber into said blowdown recovery vessel.

15. (Original) The blowdown apparatus as claimed in claim 9, further comprising a second heat exchanger in said blowdown recovery vessel arranged so that feedwater from

USPN 10/605,830
Art Unit 3749
Amdt dated 01/025/2005
Reply to Office action of 10/25/2004

said feedwater tank flows through said second heat exchanger before flowing into said boiler.

16. (Original) The blowdown apparatus of claim 9, further comprising an overflow conduit terminating near the bottom of said blowdown recovery vessel so that overflow water is drawn from near the bottom of said blowdown recovery vessel.